STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
State Revolving Fund Loan Program
L & C Tower, 8th Floor
401 Church Street
Nashville, TN 37243

FINDING OF NO SIGNIFICANT IMPACT
Approval of Facilities Plan
Memphis (Shelby County), Tennessee
Loan Nos. CWSRF 2006-195 and CWSRF 2006-196

October 8, 2007

The National Environmental Policy Act requires federally designated agencies to determine whether a proposed major agency action will significantly affect the environment. One such major action, defined by Section 511(c)(1) of the Clean Water Act, is the approval of a facilities plan prepared pursuant to Title VI of the Clean Water Act. In making this determination, the State Revolving Fund (SRF) Loan Program assumes that all facilities and actions recommended by the plan will be implemented. The state's analysis concludes that implementing the plan will not significantly affect the environment; accordingly, the SRF Loan Program is issuing this Finding of No Significant Impact (FNSI) for public review.

The City of Memphis has completed two facilities plans entitled "Clean Water State Revolving Fund Application (CWSRF 2006-195), Loosahatchie Force Mains and Gravity Interceptor Sewer, Mary's Creek Gravity Interceptor Sewer—Phase I" and "Clean Water State Revolving Fund Application (CWSRF 2006-196), Mary's Creek Gravity Interceptor Sewer—Phase II" dated January 2007. The facilities plans provide recommendations for collection system expansions in two locations south of Millington and north of Collierville in Shelby County.

The Loosahatchie Force Mains and Gravity Interceptor Sewer will be funded with Loan No. CWSRF 2006-195 and includes the construction of approximately 40,000 linear feet (LF) of 36-inch diameter gravity sewer; manholes; and 28-inch, 24-inch, and 18-inch diameter force main north of the Loosahatchie River and east of Highway 51. The Mary's Creek Gravity Interceptor Sewer will be constructed in 2 phases and includes approximately 22,000 LF of gravity interceptor sewers north of the Wolf River and east of Gray's Creek in eastern Shelby County beginning at the Wolf River Interceptor Sewer south of Walnut Grove Road and continuing eastward to Reed Hooker Road. Phase I (approximately 11,000 LF) will be funded with Loan No. CWSRF 2006-195 and consists of 36-inch and 30-inch diameter gravity sewer and manholes. Phase II (approximately 11,000 LF) will be funded with Loan No. CWSRF 2006-196 and consists of approximately 11,000 LF of 30-inch, 27-inch, and 24-inch diameter gravity sewer and manholes.

The total estimated construction costs for CWSRF 2006-195 and CWSRF 2006-196 are $7,000,000 and $2,550,000, respectively, and 2 State Revolving Fund loans in those amounts have been requested for these projects.

FINDING OF NO SIGNIFICANT IMPACT
Approval of Facilities Plan
Memphis (Shelby County), Tennessee
Loan Nos. CWSRF 2006-195 and CWSRF 2006-196

October 3, 2007

Attached is an Environmental Assessment containing detailed information supporting this proposed action. Comments supporting or disagreeing with this proposed action received within 30 days of the date of this FNSI will be evaluated before we make a final decision to proceed. If you wish to comment or to challenge this FNSI, send your written comment(s) to:

Mr. Sam R. Gaddipati, Environmental Manager
State Revolving Fund Loan Program
Tennessee Department of Environment and Conservation
L & C Tower, 8th Floor
401 Church Street
Nashville, TN 37243

or contact him by telephone at (615) 532-0445 or by e-mail at sam.gaddipati@state.tn.us.

ENVIRONMENTAL ASSESSMENT
Memphis (Shelby County), Tennessee
Loan Nos. CWSRF 2006-195 and CWSRF 2006-196

October 8, 2007

A. PROPOSED FACILITIES AND ACTIONS; FUNDING STATUS

The Loosahatchie Force Mains and Gravity Interceptor Sewer will be funded with Loan No. CWSRF 2006-195 and includes the construction of approximately 40,000 linear feet (LF) of 36-inch diameter gravity sewer; manholes; and 28-inch, 24-inch, and 18-inch diameter force main north of the Loosahatchie River and east of Highway 51. The Mary's Creek Gravity Interceptor Sewer will be constructed in 2 phases and includes approximately 22,000 LF of gravity interceptor sewers north of the Wolf River and east of Gray's Creek in eastern Shelby County beginning at the Wolf River Interceptor Sewer south of Walnut Grove Road and continuing eastward to Reed Hooker Road. Phase I (approximately 11,000 LF) will be funded with Loan No. CWSRF 2006-195 and consists of 36-inch and 30-inch diameter gravity sewer and manholes. Phase II (approximately 11,000 LF) will be funded with Loan No. CWSRF 2006-196 and consists of approximately 11,000 LF of 30-inch, 27-inch, and 24-inch diameter gravity sewer and manholes.

The facilities planning area and project location for CWSRF No. 2006-195 are indicated on the attachments to this Environmental Assessment entitled Project No. 1, Loosahatchie Force Mains and Gravity Interceptor Sewer, and Project No. 2, Sheet 1, Mary's Creek Gravity Interceptor Sewer. The facilities planning area and project location for CWSRF No. 2006-196 are indicated on the attached figure entitled Project No. 2, Sheet 2, Mary's Creek Gravity Interceptor Sewer. Descriptions of the proposed facilities and actions included in this project are listed below:

Approximately 4,500 LF of 36-inch diameter gravity sewer and approximately 35,500 LF of 28-inch, 18-inch, and 24-inch diameter force main comprise the Loosahatchie Force Mains and Gravity Interceptor Sewer project that will traverse northeasterly from an existing 60-inch diameter sewer interceptor (near Davy Crockett Park) to Fite Road, east along Fite Road to Raleigh Millington Road, and south along Raleigh Millington Road, and will terminate by connecting into the existing 18-inch and 28-inch diameter force mains at the existing 60-inch diameter Loosahatchie Interceptor on Raleigh Millington Road between the Loosahatchie River and New Allen Road.

Phase I of the Mary's Creek Gravity Interceptor Sewer project consists of the construction of 36-inch and 30-inch diameter gravity sewer and manholes beginning at the Wolf River Interceptor Sewer south of Walnut Grove Road and continuing eastward to Houston Levee Road and to Pisgah Road. A portion of the Wolf River Interceptor Sewer south of Walnut Grove Road is still under construction by the City of Memphis and is not a part of this project. Phase II of the Mary's Creek Gravity Interceptor Sewer project consists of the construction of 30-inch, 27-inch, and 24-inch diameter gravity sewer and manholes beginning at the terminus of Phase I at Pisgah Road, continuing eastward to Reed Hooker Road, and terminating north of Stable View Drive.

FUNDING STATUS

The facilities described above comprise the scope of Clean Water State Revolving Fund Loans No. 2006-195 and No. 2006-196 scheduled for funding in fiscal year 2008. The estimated project costs are summarized in the following tabulation:

PROJECT CLASSIFICATIONS	CWSRF 2006-195 COSTS	CWSRF 2006-196 COSTS
Construction	$ 6,362,250	$ 1,809,390
Contingencies	$ 637,750	$ 740,610
TOTAL	$ 7,000,000	$ 2,550,000
State Revolving Fund Loan	$ 7,000,000	$ 2,550,000

The City of Memphis has applied for two State Revolving Fund loans for CWSRF 2006-195 and CWSRF 2006-196 in the amounts of $7,000,000 and $2,550,000, respectively.

B. EXISTING ENVIRONMENT

The City of Memphis' Planning Area is located in Shelby County in west Tennessee. A discussion of existing environmental features in the area include the following:

SURFACE WATERS

Surface waters within the proposed Loosahatchie and Mary's Creek project areas include the Loosahatchie River that empties into the Mississippi River and Mary's Creek that empties into Gray's Creek north of where Gray's Creek empties into the Wolf River that, in turn, empties into the Mississippi River. The Loosahatchie River and Mary's Creek are impaired for one or more uses. Although the Mississippi River and its tributaries supply this area with great amounts of surface water, the Mississippi River does not supply drinking water for Memphis or Shelby County.

GROUNDWATER

The City of Memphis and Shelby County rely on groundwater from the Memphis Sand Aquifer for their drinking water supply. The Memphis area is located in the north-central part of the Mississippi Embayment, a broad structural syncline that plunges southward along the Mississippi River and that contains four water-bearing layers of sand and gravel from 50 to 2600 feet below ground. The Memphis sand aquifer lies from 350 to 1100 feet below ground.

SOILS

Soil associations occurring in the City of Memphis' proposed Loosahatchie and Mary's Creek project areas primarily consist of the Calloway silt loam, Falaya silt loam, and Grenada silt loam. These soils range from poorly drained to moderately drained and occur on one to five percent slopes on low terraces or along tributary streams.

TOPOGRAPHY

The topography of the City of Memphis' proposed Loosahatchie and Mary's Creek project areas varies from generally flat to gently rolling loess hills with a 2 percent to 5 percent slope in the physiographic region known as the Gulf Coastal Plain. It consists of a gentle upward slope away from the Mississippi river.

OTHER ENVIRONMENTAL FEATURES

No wild or scenic rivers or unique agricultural, scientific, cultural, ecological, or natural areas were identified in the City of Memphis' proposed Loosahatchie and Mary's Creek project areas.

C. EXISTING WASTEWATER FACILITIES

The City of Memphis owns and operates an extensive wastewater collection system in Memphis and Shelby County and 3 wastewater treatment plants (WWTPs)—the Maynard C. Stiles WWTP, the Memphis-Chapel Hill S.D. WWTP, and the T.E. Maxson WWTP. There are no known operational problems at any of the 3 WWTPs.

The wastewater collection system is comprised of over 3,100 miles of gravity sewers and force mains constructed of various materials and ranging in diameter from 6 inches to 120 inches and 85 lift stations. There are 2 existing sewer interceptors in the proposed Loosahatchie project area –a 60-inch diameter interceptor north of the Loosahatchie River near Davy Crockett Park and the 60-inch diameter Loosahatchie Interceptor on Raleigh Millington Road between the Loosahatchie River and New Allen Road. There is 1 existing sewer interceptor in the proposed Mary's Creek project area—the Wolf Creek Interceptor. As previously noted, a portion of the Wolf River Interceptor Sewer south of Walnut Grove Road is still under construction by the City of Memphis and is not a part of this project. These 3 interceptors transport sewage to the Maynard C. Stiles WWTP in northwest Memphis.

Wastewater from the proposed Loosahatchie and Mary's Creek project areas will flow to the Maynard C. Stiles WWTP for treatment and disposal. The current flow to the Maynard C. Stiles WWTP averages 75 million gallons per day (MGD) with a design capacity of 135 MGD. The anticipated total increase in flow generated by the proposed Loosahatchie and Mary's Creek projects is 6.7 MGD. The Maynard C. Stiles WWTP and dedicated collection system has sufficient capacity for the next 20 years to collect and treat the additional flow.

The Maynard C. Stiles WWTP is an activated sludge plant with 3 lagoons. Treated effluent from the Maynard C. Stiles WWTP is discharged into the Mississippi River at River Mile 738.8. Dewatered sludge from the lagoons is land applied. The proposed project will have no foreseeable impact on sludge treatment or disposal.

The Maynard C. Stiles WWTP currently operates under the National Pollutant Discharge Elimination System (NPDES) Permit No. TN0020711 that includes the following parameters and effluent limitations:

PARAMETER	EFFLUENT LIMITATIONS
BOD_5	45 milligrams per liter (mg/l) monthly average
Total Suspended Solids	52 mg/l monthly average
Dissolved Oxygen	1.0 instantaneous minimum
DDT	0.000001 mg/l monthly average
Dieldrin	0.0000014 mg/l monthly average
Settleable Solids	1.0 milliliter/liter daily maximum
pH	9.0 Standard Units daily maximum
	6.0 Standard Units daily minimum

D. NEED FOR PROPOSED FACILITIES AND ACTIONS

Two of Memphis' annexation areas are situated south of Millington just north of the Loosahatchie River and east of U. S. Highway 51 and north of Collierville just north of the Wolf River and east of Gray's Creek. These rural, undeveloped areas border developed areas that are experiencing high rates of residential growth, and these areas will be developed within the next several years. Traditionally, rural residential areas utilize septic tanks and onsite drainfields for sewage treatment and disposal because of the availability of land. The City of Memphis desires to protect public health and the environment by controlling the method of sewage treatment and disposal and providing permitted treatment and disposal to these areas.

The current population in the proposed Loosahatchie and Mary's Creek project areas is 3,000 people none of whom have access to centralized sewer service. The population in the proposed Loosahatchie and Mary's Creek project areas in the year 2027 is projected to be 67,100 people of whom all will have access to centralized sewer service. The 6.7 MGD projected flow from the proposed projects in 2027 will go to the Maynard C. Stiles WWTP for treatment.

E. ALTERNATIVES ANALYSIS

Several alternatives, including a “No-action” alternative, were evaluated for the proposed Loosahatchie and Mary's Creek collection extension projects in the January 2007 facilities plan. A summary discussion of the evaluation of the alternative for the collection system and the selection of the recommended plan follows:

NO ACTION

The “No-action” approach was not a viable alternative. Some action must be taken to eliminate possible sources of groundwater contamination by controlling the method of sewage treatment and disposal in developing areas and to protect the environment and public health. Therefore, this alternative was rejected.

Community Septic Tank System

This alternative consists of the installation of 8-inch diameter collection lines, 4-foot diameter manholes, and large community septic tanks to collect residential and commercial wastewater and treat the wastewater via onsite large lot drainfields. This alternative was not the most cost-effective and was not protective of public health or the environment and was rejected.

Individual Septic Tank System

This alternative consists of the onsite treatment of sewage at each residential and commercial site. Soils in the project areas are not conducive to onsite treatment, and this alternative would not eliminate possible sources surface water or groundwater contamination. In addition, this alternative was not the most cost-effective and was not protective of public health or the environment and was rejected.

Grinder Pump Pressure Sewer System

This system consists of small grinder pump stations at each residential and commercial site that pump the wastewater into a pressurized network of small diameter pipes. The pressure collection system consists of tubing, pressure pipe, and simplex (one pump) or duplex (two pumps) grinder pump stations housed in fiberglass basins. The City of Memphis tries to utilize gravity sewers whenever possible in order to limit operation and maintenance costs and ensure the integrity of the collection system. This alternative was not the most cost-effective and was rejected.

Conventional Gravity Interceptor Sewers and Force Mains

This alternative consists of the installation of conventional gravity interceptor sewers and force mains of various diameters to collect and transport sewage and utilize the adequate capacity in the existing interceptors and the Maynard C. Stiles WWTP. This alternative was the most protective of public health and the environment and the cost-effective solution and is the chosen alternative.

F. ENVIRONMENTAL CONSEQUENCES; MITIGATIVE MEASURES

The benefits of this project will be to avoid potential health hazards in a rapidly growing area of Shelby County and to protect public health and the environment through regulated sewage treatment practices.

During the construction phase, short-term environmental impacts due to noise, dust, mud, disruption of traffic, runoff of silt with rainfall, etc., are unavoidable. Minimization of these impacts will be required; however, many of these minimization measures will be temporary and only necessary during construction. Using the following measures to prevent erosion will minimize impacts on the environment:

1. Specifications will include temporary and permanent measures to be used for controlling erosion and sediment.
2. Soil or landscaping maintenance procedures will be included in the specifications.

3. The contractor will develop an Erosion Control Plan. It will contain a construction schedule for each temporary and permanent measure controlling erosion and sediment. It will include the location, type, and purpose for each measure and the times when temporary measures will be removed or replaced.

These measures, along with requiring the contractor to return the construction site to as-good-as or better-than its original condition, will prevent any adverse impacts due to erosion.

No prime or unique agricultural lands were identified and therefore will not be adversely affected.

No endangered species of flora or fauna were identified within the proposed construction corridor. Effects on flora and fauna will be confined and temporary.

No adverse impacts on the floodplain are anticipated since only buried pipe is proposed in the floodplain.

An archaeological survey for the CWSRF 2006-195 projects was transmitted to the SRF Loan Program on September October 19, 2006, and an archaeological survey for the CWSRF 2006-196 project was transmitted to the SRF Loan Program on September 13, 2006. The state's Historic Preservation Officer has reviewed the project and has determined that the project will not impact known significant cultural resources.

G. PUBLIC PARTICIPATION; SOURCES CONSULTED

A Public Meeting was held on Monday, April 13, 2007, at 6:30 p.m., local time. The selected plan for wastewater collection and user charges were described to the public, and their input was received. This agency is not aware of any unresolved public objections that may have been voiced before or after the public meeting regarding this project.

The existing user charges are projected to be sufficient to repay the SRF loan. Therefore, no incremental increase in user charges will be required.

Sources consulted about this project for information or concurrence were:

1. Tennessee Department of Agriculture
2. Tennessee Department of Economic and Community Development (ECD)
3. Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control (DAPC)
4. Tennessee Department of Transportation (TDOT)
5. TDEC, Division of Groundwater Protection (DGWP)
6. Tennessee Historical Commission
7. TDEC, Division of Archaeology (DA)
8. TDEC, Division of Natural Areas (DNA)
9. TDEC, Division of Solid Waste Management (DSWM)
10. TDEC, Division of Water Pollution Control (DWPC)
11. TDEC, Division of Water Supply (DWS)
12. Tennessee Wildlife Resources Agency (TWRA)
13. United States Army Corps of Engineers (USACE)
14. United States Fish and Wildlife Service (USF&W)
15. City of Memphis
16. Shelby County
17. Mr. Ed Hargraves, P.E., Askew, Hargraves, & Harcourt—Memphis, Tennessee

H. SPECIAL CONDITIONS

The State Revolving Fund loan agreement will have the following special conditions:

1. The United States Fish and Wildlife Service has indicated the presence of wetlands in the vicinity of the proposed projects. The loan recipient should contact the United States Army Corps of Engineers regarding the requirements of wetlands protection status and inform the SRF Loan Program of their response.

2. The Tennessee Division of Solid Waste Management in the Memphis Environmental Field Office has identified solid or hazardous waste sites adjacent to the CWSRF 2006-195 project area. No known sites are in or adjacent to the CWSRF 2006-196 project area. The loan recipient should contact John Boatwright, P.E., with the Division of Solid Waste Management @ (901) 368-7948 for additional information on these sites.